

Remarks

This is a complete response to the Advisory Action mailed May 17, 2007.

The Office reopened prosecution in response to Applicant's first appeal brief filed May 16, 2005. In reply to the final rejection of February 28, 2006 Applicant filed a Pre-Brief Request for Review on June 28, 2006. The Panel's Decision of August 30, 2006 was to again reopen prosecution. The subsequent office actions of November 14, 2006 and May 17, 2007 maintained the rejections on the same basis as that on which the Pre-Brief Panel reopened prosecution. Accordingly, absent the reconsideration requested herein this case remains not in condition for appeal.

Rejection Under Section 102

Claims 1-3, 7, 10-12, 16, 17, 20-22, 25, and 26 stand rejected as allegedly being anticipated by Staszewski '693. Applicant respectfully traverses this rejection.

THE OFFICE HAS FAILED TO SUBSTANTIATE ANTICIPATION OF CLAIMS 1 AND 20 BY NOT SHOWING EVIDENCE THAT STASZEWSKI '693 DISCLOSES THE *TRANSITION LOCATION SIGNAL* RECITED BY THOSE CLAIMS

Independent claims 1 and 20 recite the following in pertinent part:

a phase/frequency comparator circuit that is configured to generate a phase error responsive to a transition location signal.

(excerpt of claim 1, emphasis added)

mapping the snapshot to a numerical phase difference value that is generated responsive to a signal that corresponds to a transition location of the first signal.

(excerpt of claim 20, emphasis added)

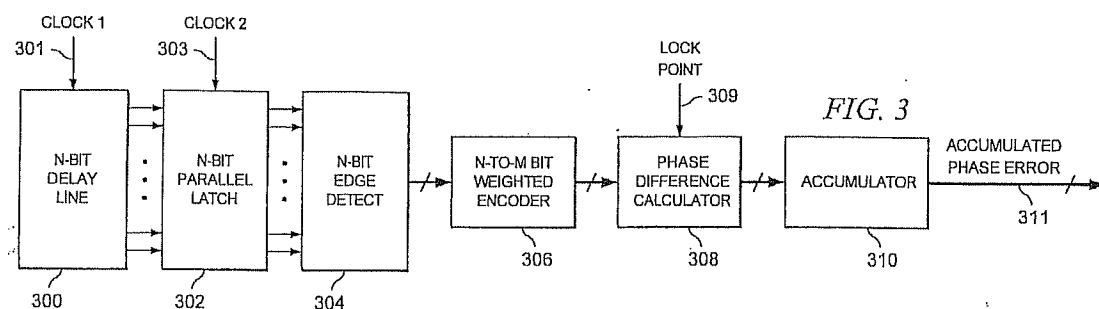
During examination claims are given their "broadest reasonable interpretation consistent with the specification."¹ The "broadest reasonable interpretation" is the meaning that the skilled artisan would give to the claim term in view of the associated usage provided

in the specification.² A construction that is inconsistent with the written description would not be arrived at by the skilled artisan, and is therefore not a “reasonable interpretation.”³

The plain meaning of the claim language that is emphasized in the excerpts of claims 1 and 20 above (i.e. *transition location signal*), considering the context of which the language forms a part, is that of a signal that indicates the location of a transition. Applicant has shown that the specification provides an explicit definition of the disputed claim language:⁴

N-bit edge detect circuit 304 outputs a single bit at the transition point of a falling edge (or rising edge, depending on the design) in the snapshot provided by N-bit parallel latch 302. This signal bit may be referred to as a transition location signal.
(specification pg. 7 lines 7-10, emphasis added)

In support of the claimed transition location the specification discloses a signal comparator structure employing an N-bit delay line 300 receiving CLOCK1 signal and an N-bit parallel latch 302 receiving CLOCK2 signal:



¹ *Phillips v. AWH Corp.*, 75 USPQ2d 1321 (Fed. Cir. 2005)(en Banc); MPEP 2111

² *In re American Academy of Science Technical Center*, 70 USPQ2d 1827 (Fed. Cir. 2004); *In re Cortright*, 49 USPQ2d 1463, 1468 (Fed. Cir. 1999); *In re Morris*, 44 USPQ2d 1023 (Fed. Cir. 1997)

³ *Phillips, supra*; *In re Morris, supra*; *In re Zletz*, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989)

⁴ See Applicant's Pre-Brief Request pg. 2, Applicant's Response of 5/30/2006 pg. 10, Applicant's Response of 11/28/2005 pg. 14, Appellant's Brief of 5/16/2005 pg. 8, Applicant's Response of 3/15/2005 ppg. 10-11.

The N-bit delay line 300 is reset each time a transition occurs in CLOCK1.⁵ The CLOCK1 transition propagates through the N-bit line 300, the status of the propagation being instantaneously observable via the respective N outputs.⁶ When CLOCK2 transitions then the N-bit parallel latch 302 captures a snapshot of the N outputs.⁷ That snapshot captures the progress of the CLOCK1 transition as it propagates through the N-bit delay line 300.⁸ Thus, the N-bit edge detect 304 provides a signal indicating the location of the CLOCK1 transition.

The final rejection of claims 1 and 20 is based on the Office's rationale that the snapshot signal 604 of the plurality of registers 504 in Staszewski '693 anticipates the claimed *transition location signal*:

Thus, by given the broadest reasonable interpretation, TDC_RISE, TDC_FALL is the transition location signal, since the snapshot taken by the parallel latches (504's in Fig. 5 of Staszewski) directly indicates the location of the feedback clock 114 through the tapped delay line 502's precisely at the occurrence of the feedback transition signal 110.
(Office Action of 2/28/2006, cited in final rejection of 5/17/2007, emphasis added)

However, Staszewski '693 itself clearly defines the snapshot 604 to be a timing signal, not a location signal as claimed:

During a positive transition (enumerated 602 in FIG. 6) of the reference clock FREF 110, each of the latch/registers 504 will be queried in order to obtain a snapshot of the quantized fractional phase difference between the dVCO 104 clock signal CKV 114 phase and the reference clock FREF 110 signal phase.
(Staszewski '693 col. 8 lines 30-36, emphasis added)

During a positive transition 602 of the reference oscillator FREF 110, the plurality of latch/registers 504 are accessed

⁵ Specification pg. 6 lines 23-26.

⁶ Specification pg. 6 lines 12-23.

⁷ Specification pg. 7 lines 1-3.

⁸ Specification pg. 7 lines 3-6.

to obtain a snapshot 604 of the delayed replicas of the dVCO clock CKV 114 relative to the rising edge of the reference oscillator FREF 110. The snapshot 604 can be seen to express the time difference as a digital word. (Staszewski '693, col. 8 lines 45-46)

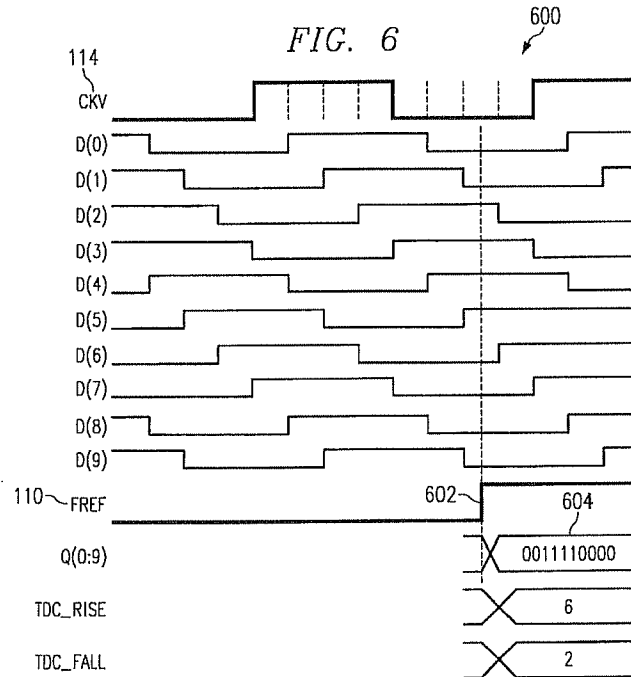
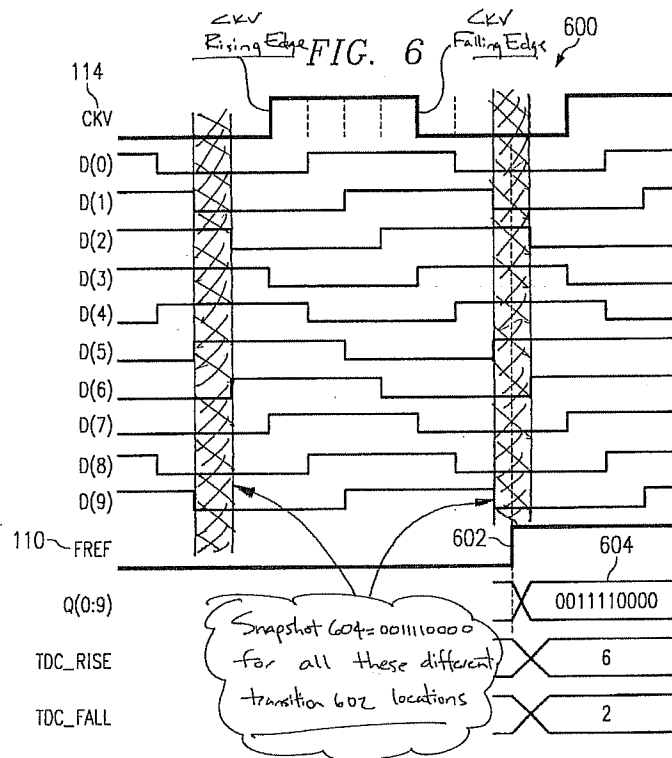


FIG. 6 of Staszewski '693 clearly defines the snapshot signal 604 as a multi-bit word, each bit being associated with the state of a respective delayed replica D(n) of the oscillator 104 (dVCO) pulse CKV 114. The skilled artisan readily recognizes that the snapshot signal 604 indicates a timing difference between the FREF transition 602 and the CKV 114. The snapshot signal 604 cannot define the location of the transition 602 because Staszewski '693 does not synchronize any reference point associated with a transition of CKV 114. Rather, the snapshot signal 604 is an observation of an instantaneous state within a continuum of consecutively delayed CKV 114 pulses.

Applicant has shown that the snapshot signal 604 is irrespective of transition 602 location because there is a plurality of different locations that the transition 602 could occur

and yet produce the same snapshot signal 604. For example, the following marked-up FIG. 6 of Staszewski '693 illustrates that the snapshot signal 604 in and of itself cannot differentiate between whether the transition 602 is leading or lagging the CKV 114, in that the same snapshot signal 604 exists both at multiple locations prior to the CKV rising edge and at multiple locations following the CKV falling edge:



The skilled artisan readily understands that Staszewski '693 discloses employing the snapshot signal 604 to determine a phase difference between FREF and CKV, and then compensates for the phase difference in a manner described by equations 8-13.⁹ The skilled artisan also readily understands that the present embodiments as claimed determines a transition location signal, as discussed above, and then from the transition location signal

⁹ Staszewski '693 col. 8 lines 50-55.

derives a numerical phase difference value via the N-to-M weighted encoder 306 in FIG. 3 discussed above.¹⁰

Therefore, the skilled artisan would conclude that the Office's interpretation of *transition location signal* to include the phase difference of the signals being compared is inconsistent with both the plain meaning of the phrase and the usage of the phrase in the specification. As such, the Office's construction of *transition location signal* is not within the broadest reasonable interpretation consistent with the specification, and as such cannot sustain the present anticipatory rejection.

Applicant respectfully believes that the rejection of claims 1 and 20 and the claims depending therefrom should be reversed.

THE OFFICE HAS FAILED TO SUBSTANTIATE ANTICIPATION OF CLAIM 10 BY
NOT SHOWING EVIDENCE THAT STASZEWSKI '693 DISCLOSES THE *ENCODING
CIRCUITRY* RECITED BY THAT CLAIM

Independent claim 10 recites in pertinent part:

*wherein the phase/frequency comparator includes...
encoding circuitry coupled to the phase detecting stage.
(excerpt of claim 10, emphasis added)*

In support of the rejection the Office relies on the extrinsic evidence of a dictionary definition for "encoder: A digital device for converting an input digital signal into its equivalent binary code."¹¹ The Office's rationale for the rejection is that the NORM circuit of Staszewski '693 anticipates the *encoding circuitry* of claim 10 because it "converts the input digital signal into its equivalent binary code."¹²

¹⁰ Specification pg. 7 lines 11-13.

¹¹ Office Action of 2/28/2006 pg. 8.

¹² Office Action of 2/28/2006 pg. 8, citing Staszewski '693 col. 5 line 64 to col. 6 line 43; repeated in Office Action of 5/17/2007 pg. 7.

The rejection is without merit because Applicant has shown that the passage on which the Office relies neither discusses the NORM circuit nor discloses anything that “converts the input digital signal into its equivalent binary code.”¹³ The rationale for the rejection appears to be based upon a misplaced characterization of the cited reference. Applicant has also shown that the NORM (normalization) circuit of Staszewski ‘693 alters the input value quantitatively, not qualitatively, and that as such the skilled artisan would readily understand that the NORM circuit of Staszewski ‘693 is not within the definition of what is referred to as an “encoding circuit.”¹⁴

Therefore, the skilled artisan would conclude that the Office’s interpretation of *encoding circuit* to include the normalization circuit of Staszewski ‘693 is inconsistent with both the plain meaning of the phrase and the usage of the phrase in the specification. As such, the Office’s construction of *encoding circuit* is not within the broadest reasonable interpretation consistent with the specification, and as such cannot sustain the present anticipatory rejection.

Rejection Under Section 103

Claims 8 and 18 stand rejected as being unpatentable over Staszewski ‘693 in view of Brachmann ‘154. Applicant respectfully traverses this rejection because Brachmann ‘154 does not cure the deficiencies of Staszewski ‘693 set forth above, and because these claims are allowable as depending from an allowable independent claim, for reasons above, and providing additional limitations thereto. Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claims 9 and 19 stand rejected as being unpatentable over Staszewski ‘693.

¹³ Applicant’s Response of 2/14/2007 ppg. 11-13; Applicant’s Response of 5/30/2006 ppg. 14-17; Applicant’s Response of 11/28/2005 ppg. 18-20.

Applicant respectfully traverses this rejection because these claims are allowable as depending from an allowable independent claim, for reasons above, and providing additional limitations thereto. Applicant respectfully requests reconsideration and withdrawal of this rejection.

Allowable Subject Matter

Applicant acknowledges with appreciation the indication of allowability of claims 4-6, 13-15, 23, and 24. However, these claims are allowable as depending from an allowable independent claim, for reasons above, and providing additional limitations thereto. Accordingly, Applicant has opted not to place these allowable claims in independent form.

Conclusion

This is a complete response to the Advisory Action mailed May 17, 2007. Applicant respectfully requests that the Office enter the above amendments and allow all of the pending claims.

Applicant has also submitted herewith a request for telephone interview should these amendments not be successful in obviating all rejections of the pending claims. The interview is necessary to address the unresolved issues set forth herein making this case not in condition for appeal.

¹⁴ *Id.*

The Office is encouraged to contact the undersigned should any questions arise concerning this response or any other matter concerning this case.

Respectfully submitted,

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